

PA

Work Order ID 149868

149868

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August 05, 2016 2:26:39 PM

Item ID: D4931-5 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Engine Fitting (for B3e models)
 Start Date: 10/3/2016 Start Qty: 10.00 *10* Cust Item ID:
 Required Date: 10/11/2016 Req'd Qty: 10.00 *10* Customer:
 Reference:

Approvals: Process Plan: STH Date: AUG 05 2016 Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D4931	A								
100	Hardinge CNC LATHE SMALL	0.22				10	0		DAS 45 9-89 2016-08-31
100		0.57							
Doosan	Memo								
Doosan Lathe	Machine as per folio FB210 Folio rev: <u>AA</u> DWG REV: <u>A</u>								
	Deburr								
110	QC2- Inspect parts off machine FAI/FAIB	0.00				10	0		DAS 45 9-89 2016-08-31
110		0.02							
QC	Memo								
Quality Control									

SCRAP

DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____		
Description Work Order Deviation				Disposition					

9A-732

Root Cause				FAULT CATEGORY			
☐ Environment	☐ Design	☐ Doc/Data	☐ Equip/Tooling	☐ Handling/Pre	☐ Material	☐ Internal Transport	☐ Tribal Knowledge
☐ LOA	☐ Substation	☐ Past Expiry Date	☐ Misidentified	☐ No Re-verification	☐ Operator	☐ Offset/Setup	☐ Supplier
				☐ Training	☐ Use for Testing	☐ Poor Information	☐ Rushing
				☐ Product Improvement	☐ Process Improvement	☐ Manufacturing Process	☐ Past Due
				OTHER : _____			

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[illegible]

DQA: dat Date: 2016-10-7
 QA Closed: dat Date: SEP 28 2015

WORK ORDER NON-CONFORMANCE / UPDATE



Work Order update only ☐

Work Order: <u>149868</u> Part No. <u>D49315</u> NCR No. <u>16-6055</u>		DISPOSITION Rework ☐ Scrap ☒ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Cross tube ☐ Water Jet ☐ Engineering ☐ Machining ☒ Small Fab ☐ Prod. Eng. Coord. ☐ Quality ☐ Thermoforming ☐ Finishing ☐ Rec/Store/Packaging ☐ Other ☐ Large Fab ☐ Composite ☐ Supplier ☐					
Date: <u>16.09.07</u>		Step #: <u>112</u>		QTY Effective: <u>10</u>			MRB (QSI042) Approval DAS 9 9-89 <u>16.09.07</u>		
Description Work Order Deviation				Disposition				Completed By <u>J.C.-L</u> <u>16-09-07</u>	
Dimension 1.025" is 1.185" R.C. operator drill holes using wrong drawing				Scrap + destroy no replace				Lead hand/ Supervisor Approval Verification DAS 08 9-89 <u>16/09/07</u>	
								QC / QA Coordinator Approval DAS 9 9-89 <u>16.09.07</u>	
Root Cause Environment ☐ No Re-verification ☐ Design ☒ Operator ☐ Doc/Data ☐ Offset/Setup ☐ Equip/Tooling ☐ Supplier ☐ Handling/Pre ☐ Training ☐ Material ☐ Use for Testing ☐ Internal Transport ☐ Poor Information ☐ Tribal Knowledge ☐ Rushing ☐ LOA ☐ Product Improvement ☐ Substation ☐ Process Improvement ☐ Past Expiry Date ☐ Manufacturing Process ☐ Misidentified ☐ Past Due ☐				FAULT CATEGORY Pressure/Forced ☐ Temperature/Cure ☐ Power Loss/Surge ☐ Positioned Wrong ☐ Bending ☐ Set-up ☐ Folio/Program ☐ Outside Dimensions ☐ Centre Not Concentric ☐ BOM/Route ☐ Grain ☐ Over/Under tolerance ☐ Cracks ☐ Broken/Damage/Defect ☐ Weld ☐ Part Incorrect ☐ Crimp/Kink/Ripple/Wave ☐ Inspection Incomplete/Unqualified ☐ Wrong Stock Pulled ☐ Part Lost/Missing ☐ Cuffs ☐ Contamination ☐ Out of Sequence ☐ Part Moved ☐ Crushing ☐ Countersink ☐ Off-set ☐ Drawing ☐ Heat Treat ☐ Cut Too Short ☐ Misabeled ☐ Finish ☐ Wave/Twist in Tube ☐ Instructions Incomplete/Unclear ☐ Fit/Function ☐ Misread ☐ Marks/Chatter ☐ Drill Holes ☒ Misaligned/off center ☐ Turning Sequence ☐					
OTHER :									

Work Order ID 149868

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149868

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Item ID: D4931-5

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Engine Fitting (for B3e models)

Start Date: 10/3/2016 Start Qty: 10.00

10

Cust Item ID:

Required Date: 10/11/2016 Req'd Qty: 10.00

10

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Identify as per dwg & Stock Location: _____	0.00							
130									
Packaging	Memo	0.02							
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.17							
Quality Control									

 DAS
21
9-89

SEP 12 2016

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : _____					

Picklist Print

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Page 1

Work Order ID: 149868

149868

Parent Item: D4931-5

D4931-5

Parent Item Name: Engine Fitting (for B3e models)

Start Date: 10/3/2016

Required Date: 10/11/2016

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A NEW ISSUE 13-09-16 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M303R2.000		Purchased		No			f	15.7000		1.578947			

M303R2 000

303 ROUND BAR 2"

Location

Loc Qty

Loc Code

MAT028

15.7

m133827

2.5

m134776

13.2

DAE
45
9-89

C. L. G. 2016-08-31

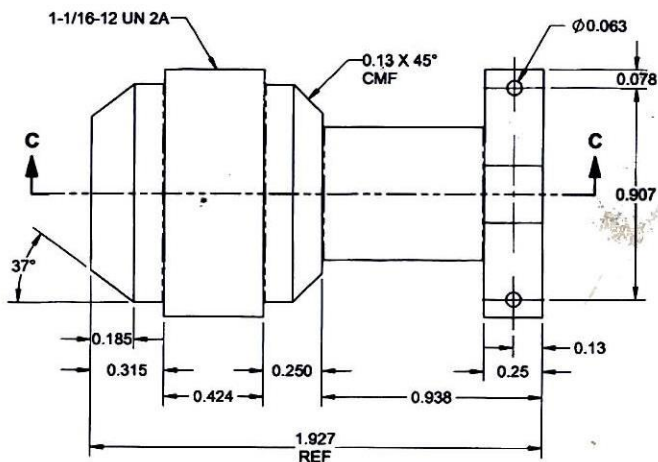
DQA: _____ Date: _____

**WORK ORDER NON-CONFORMANCE / UPDATE**

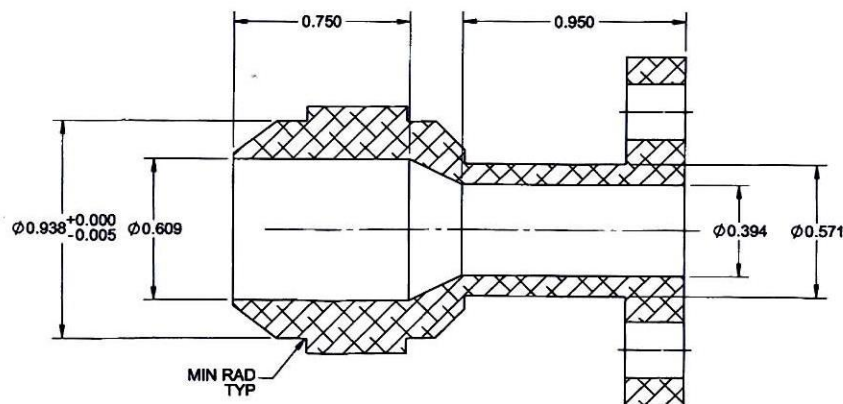
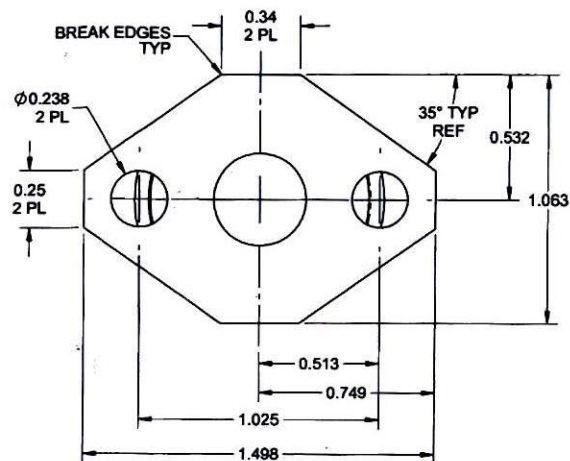
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐		OTHER : _____					



D4931-5 EAPS P2 ENGINE FITTING
(FOR B3 MODELS WITH ARRIEL 2D ENGINES)



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO 149868

SH

AUG 05 2016

RELEASED
2014-01-08

NOTES:

- 1) MATERIAL: AISI 303 STAINLESS STEEL ROUND BAR
PER ASTM A582
REF DART SPEC M303R
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: 0.22 lbs

SECTION C-C

DESIGN	AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	<i>[Signature]</i>	DRAWING NO. D4931	REV. A
MFG. APPR.	<i>[Signature]</i>		SHEET 3 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	EAPS P2 ENGINE FITTING	NTS
DATE	13.09.20	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

DART AEROSPACE LTD		Work Order:	149568
Description: EAPS P2 Engine Fitting		Part Number:	D4931-5
Inspection Dwg: D4931	Rev: A	Page 1 of 1	

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
1-1/16-12 UN 2A	N/A	OK	✓		NUT	Shop
37°	+/-0.5°	37°	✓		angle	Shop
0.185	+/-0.010	0.185	✓		depth g	DR-C7
0.315	+/-0.010	0.315	✓		"	"
0.424	+/-0.010	0.424	✓		Caliper	DR-C1
0.250	+/-0.010	0.250	✓		"	"
0.938	+/-0.010	0.941	✓		"	"
1.927 Ref	+/-0.010	1.935	✓		"	"
0.25	+/-0.030	0.256	✓		"	"
0.13	+/-0.030	0.13	✓		"	"
0.907	+/-0.010	0.907	✓		Caliper	DR-C1
0.078	+/-0.010	0.079	✓		HG	31006
Ø0.063	+0.004/-0.001	0.062	✓		caliper	DR-C1
0.13 x 45°	+/-0.030 x +/-0.5°	0.13x45°	✓		"	L1
0.34	+/-0.030	0.34	✓		"	"
0.25	+/-0.030	0.25	✓		"	"
Ø0.238	+0.005/-0.001	0.238	✓		coliper	206-08
35°	+/-0.5°	35°	✓		angle	Shop
0.532	+/-0.010	0.528	✓		caliper	DR-C1
1.063	+/-0.010	1.059	✓		"	
0.513	+/-0.010				"	
0.749	+/-0.010	0.75	✓		"	DR-C1
1.025	+/-0.010					
1-1/16-12 UN 2A	max 1.0995					
M.O.W 0.055	mid 1.0938	1.0962	✓			

DAS
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Measured by:	9-89	Audited by:		Preliminary Approval:	
Date:	206-08-31	Date:		Date:	

Rev	Date	Change	Revised by	Approved
A	14.06.24	New Issue	KJ	